4 ordering Key

STÖGRA Stepper motors are designed as modular system. This enables us to provide a great variety of standard motor types and a high flexibility for customer specific solutions.

SM □□.□.18□□□□□□

series	
	56
	87
	88
	107
	168

stack	
	1
	2
	[2] 3
	[1] [2] 4

type	
[1] metric	M
inch	J
[2] servo mount	SRF

connection	
[2] leads	L
connector angled	X
connector straight	Y
cast connection box (no indication)	

current in A/Ph	
depending on motor type	1 until 12

options	
N	shaft with keyway (SM 87 / 88) (included in standard version for series SM 107 and SM 168)
W	double ended shaft (not with encoder)
WN	double ended shaft with keyway
F	shaft with woodruff (only SM 56)
Z9 [3]	sealed (until IP 68 according to DIN40050/EN60529/IEC529)
V	vacuum version until 10^{-6} Torr (not gased out)
B	brake
E50	encoder 2 x 50 pulse/rev
H200	encoder 2 x 200 pulse/rev.+ zero pulse
H500	encoder 2 x 500 pulse/rev.+ zero pulse
PE x PR x	planetary gear head (x=gear ratio; e.g. PE8 or PR8)
Z x	customer specific version (x will be assigned by Stögra)

[1] not for series 56 [2] not for series 168

[3] IP68 according to DIN 40050 / EN60529 / IEC529 – IP58 according to VDE0530-5 / EN60034-5 / IEC34-5

Please note, not all options can be combined!

SM 86 series is replaced by SM 87 series, SM 108 and SM 109 series is replaced by SM 107 series.

Cable glands are not included in standard motor deliveries! Cable glands must be ordered seperately. (See page 39)

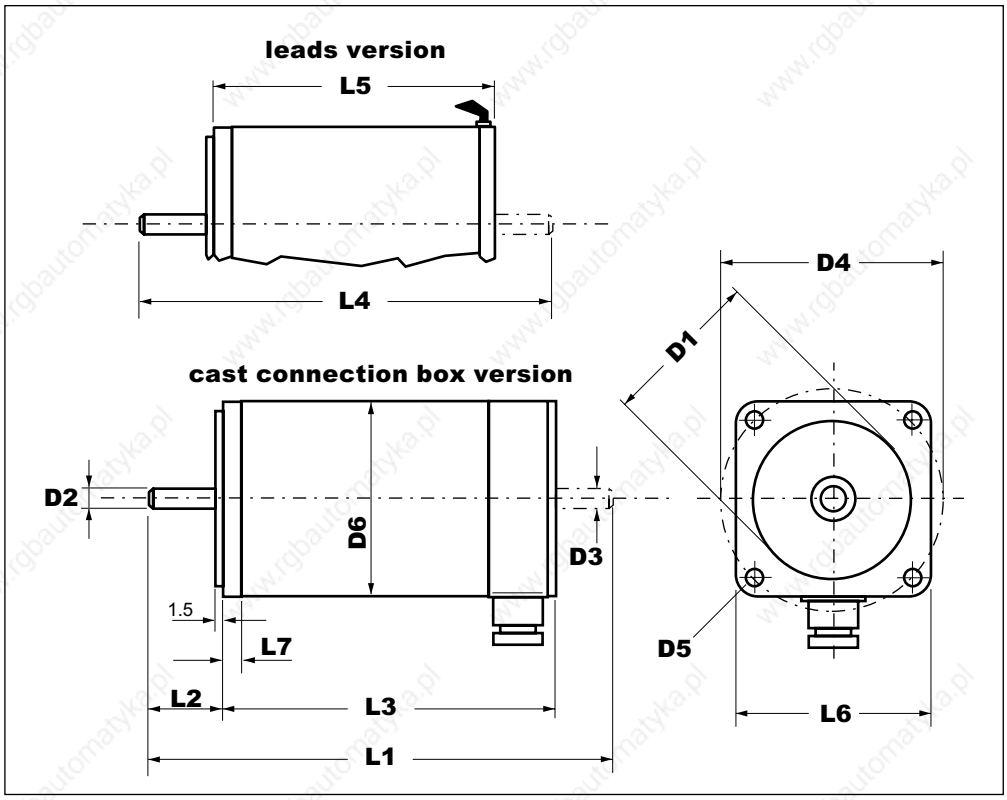
Counter connectors are not included for motors with connectors! Counter connectors must be ordered seperately. (See page 22)

general STÖGRA motor specifications:

- ± 3% accuracy based on 1.8° motor step angle (non cumulative)
- operating temperature -30°C until 80°C (short time until 100°C) for standard types
- insulation class F according to VDE 0530
- dielectric motor strength 1800 vrms (series 56: 1000 vrms)
- high bearing thrust and overhang loads

order examples:

SM 56.2.18J3E50 PE8
SM 87.1.18ML3
SM 88.3.18M8XBH200
SM 107.2.18M12BE50 PE4
SM 168.2.18M12



stepping motor		D1 -0.05		D2 -0.02		D3 -0.02		D4		D5	D6	L1	L2	L3	L4	L5	L6	L7	thread of cable entry
series	type	M	J	M	J	M	J	M	J				+0.5	±0.5		±0.5			
56	SM 56.1.18											108		76	90	50			
	SM 56.2.18		38.1		6.35		6.35		66.5	5.3	56.5	134	21	102	116	76	56.5	5	M20 x 1.5
	SM 56.3.18											162		130	144	104			
87	SM 87.1.18	73		10 (12)[1]	9.52	10 (12)[1]	9.52	99		6.5	86	137	31.5	85.5	137	60.5	86	5.5	M20 x 1.5
	SM 87.2.18											169		117.5	169	92.5			
	SM 87.3.18											201		149.5	201	124.5			
	SM 87.4.18											233		181.5	233	156.5			
88	SM 88.1.18	73		12 (10)[1]	9.52	12 (10)[1]	9.52	99		6.5	86	145	31.5	93.5	145	68.5	86	7	M20 x 1.5
	SM 88.2.18											177		125.5	177	100.5			
	SM 88.3.18											209		157.5	209	132.5			
	SM 88.4.18											241		189.5	241	164.5			
107	SM 107.1.18	60	55.54	12	12.7	10	12.7	127.5	125.5	8.5	108	170	32	111		89.5	108	9	M20 x 1.5
	SM 107.2.18			16	15.87							238	50	161		139.5			
	SM 107.3.18					12						288		211		189.5			
	SM 107.4.18											338		261		239.5			
168	SM 168.1.18	180		24		19		215		15	168	268	50.5	179			192	17	M20 x 1.5
	SM 168.2.18											343		254					

all dimensions in mm

[1] series SM87 also available with 12 mm shaft and series SM88 also available with 10 mm shaft

M = metric

J = inch

weight and rotor inertia are for standard versions with cast connection box without double ended shaft		**electrical specifications**				**mechanical specifications**						
		resistance per phase	inductance per phase	current per phase unipolar	current per phase bipolar	step angle (at full step)	holding torque	detent torque	rotor inertia	bearing thrust load	bearing overhang load	weight
series	**motor type**	**Ohm**	**mH**	**A**	**A**	**°**	**Nm**	**Nm**	**kgcm²**	**N**	**N**	**kg**
56	SM 56.1.18 J1	4.75	9	1	1.4	1.8	0.45	0.04	0.125	80	150	0.6
	SM 56.1.18 J3	0.72	1	3	4.2							
	SM 56.1.18 J3.9	0.42	0.64	3.9	5.5							
	SM 56.2.18 J1.5	3.9	9	1.5	2.1	1.8	0.85	0.08	0.25	80	150	1
	SM 56.2.18 J2	2.6	5	2	2.8							
	SM 56.2.18 J3	1.2	2.6	3	4.2							
	SM 56.3.18 J1.5	4.3	9	1.5	2.1	1.8	1.25	0.12	0.375	80	150	1.35
	SM 56.3.18 J3	1.46	3	3	4.2							
	SM 56.3.18 J4.6	0.72	1.2	4.6	6.5							
87	SM 87.1.18 M1.6	2.9	6	1.6	2.3	1.8	1.8	0.08	0.65	180	280	1.7
	SM 87.1.18 M3	0.72	1.6	3	4.2							
	SM 87.1.18 M5	0.28	0.7	5	7							
	SM 87.2.18 M3.5	0.74	3	3.5	5	1.8	3.6	0.16	1.3	180	280	2.65
	SM 87.2.18 M4.6	0.48	1.5	4.6	6.5							
	SM 87.2.18 M6	0.38	1	6	8.4							
	SM 87.3.18 M3.5	1.1	5	3.5	5	1.8	5.4	0.24	1.95	180	280	3.65
	SM 87.3.18 M6	0.43	1.7	6	8.4							
	SM 87.3.18 M7	0.33	1	7	10							
	SM 87.4.18 M6	0.55	2.3	6	8.4	1.8	7.2	0.32	2.6	180	280	4.6
	SM 87.4.18 M7	0.42	1.8	7	10							
88[1)]	SM 88.1.18 M2	1.88	11.1	–	2	1.8	3	0.12	1.35	180	280	1.9
	SM 88.1.18 M4	0.5	2.5	–	4							
	SM 88.1.18 M8	0.13	0.75	–	8							
	SM 88.2.18 M2	3.61	26	–	2	1.8	6	0.24	2.7	180	280	2.85
	SM 88.2.18 M4	0.74	5.5	–	4							
	SM 88.2.18 M8	0.21	1.5	–	8							
	SM 88.3.18 M4	1.14	10.9	–	4	1.8	9	0.36	4.05	180	280	3.85
	SM 88.3.18 M8	0.29	2.6	–	8							
	SM 88.3.18 M12	0.14	1	–	12							
	SM 88.4.18 M8	0.37	3.55	–	8	1.8	12	0.48	5.4	180	280	4.8
	SM 88.4.18 M12	0.12	1.75	–	12							
107	SM 107.1.18 M4 [1)]	0.45	4.8	–	4	1.8	5	0.2	4	400	650	4.3
	SM 107.1.18 M6	0.3	1.6	5	7							
	SM 107.1.18 M8	0.225	1.2	5.7	8							
	SM 107.1.18 M12	0.1	0.55	8.8	12.5							
	SM 107.2.18 M4 [1)]	0.76	9.6	–	4	1.8	9	0.4	8	400	650	7.2
	SM 107.2.18 M8	0.38	2.4	5.7	8							
	SM 107.2.18 M10	0.25	1.6	7.1	10							
	SM 107.2.18 M12	0.175	1.15	8.8	12.5							
	SM 107.3.18 M6 [1)]	0.56	7.6	–	6	1.8	13	0.6	12	400	650	9.8
	SM 107.3.18 M10	0.38	2.7	7.1	10							
	SM 107.3.18 M12	0.28	1.9	8.8	12.5							
	SM 107.4.18 M6 [1)]	0.68	10.8	–	6	1.8	17	0.8	16	400	650	12.5
	SM 107.4.18 M12	0.34	2.7	8.8	12.5							
168	SM 168.1.18 M12	0.18	2.5	8.8	12.5	1.8	19	0.3	31.2	660	1000	18
	SM 168.2.18 M12	0.28	5	8.8	12.5	1.8	38	0.6	64.4	660	1000	23

[1)] only with bipolar winding in standard version

typical values